

Listing of the claims:

1. (Withdrawn) Device for cultivating cells in liquid columns on a millilitre scale, having a container for receiving a liquid culture suspension of the cells, an agitation system for mixing the culture suspension in the container about a mixing axis, characterised in that at least one of the container and the agitation system are configured in such a manner that the flow velocity is modified at least one of locally and temporally along a streamline or flow line about the agitation axis.

2. (Withdrawn) Device according to claim 1, characterised in that at least one of the container and the agitation system are configured in such a manner that, by means of the agitation system, conveyance of the culture suspension which is directed from the suspension surface to the base of the container is effected.

3. (Withdrawn) Device according to claim 2, characterised in that the conveyance of the culture suspension has a component which is axial with respect to the mixing axis.

4. (Withdrawn) Device according to claim 1, characterised in that the inner walls of the container which enclose the culture suspension have, below, at least one of and above the rotational plane of the agitation system, a non-rotationally symmetrical form.

5. (Withdrawn) Device according to claim 1, characterised in that the inner walls of the container which enclose the culture suspension form, below at least one of in and above the rotational plane of the agitation system, a polygon, preferably with four, five, six or more corners.

6. (Withdrawn) Device according to claim 1, characterised in that the rotational axis of the agitation system is disposed off-centre or eccentrically in the container with respect to the inner walls of the container which enclose the culture suspension.

7. (Withdrawn) Device according to claim 1, characterised in that at least one baffle is disposed on the inner wall of the container along the circumference of the agitation system.

8. (Withdrawn) Device according to claim 1, characterised in that one, two, three, four or more baffles are disposed along the inner wall of the container, at a spacing, advantageously at a uniform spacing, relative to each other.

9. (Withdrawn) Device according to claim 7, characterised in that the baffle or baffles is or are disposed at least one of below, in and above the rotational plane of the agitation system.

10. (Withdrawn) Device according to claim 7, characterised in that the agitation system and the baffle are disposed at a minimum gap spacing relative to each other of 0.05 mm to 20 mm, preferably 0.1 mm to 3 mm.

11. (Withdrawn) Device according to claim 1, characterised in that the container is a flask, a reagent glass or a cavity of a microtitre plate or of another plate which is provided with cavities.

12. (Withdrawn) Device according to claim 1, characterised in that the agitation system is at least one of magnetically positioned and driveable.

13. (Withdrawn) Device according to claim 1, characterised in that the agitation system is mounted or not mounted.

14. (Withdrawn) Device according to claim 7, characterised in that the agitation system is mounted via a shaft and, if necessary, is driveable via the shaft.

15. (Withdrawn) Device according to claim 14, characterised in that the shaft and the baffle or baffles are configured in one piece.

16. (Withdrawn) Device according to claim 14, characterised in that the shaft and the baffle or baffles is or are insertable into the container.

17. (Withdrawn) Device according to claim 14, characterised in that the shaft protrudes into the container from above.

18. (Withdrawn) Device according to claim 14, characterised in that the shaft is enlarged at its lower end or has a flange.

19. (Withdrawn) Device according to claim 14, characterised in that the shaft is configured as a solid material shaft or as a hollow pipe.

20. (Withdrawn) Device according to claim 14, characterised in that the shaft is configured as a hollow pipe and a nozzle is disposed on its end which is open at the bottom.

21. (Currently Amended) Agitation system comprising: having a basic body which, ~~in operation,~~ has an upper side and an underside, a two opposing lateral bores characterised in that, in the basic body, at least one first through-channel extending from the underside to intersect with the two opposing lateral bores, at least one second through-channel extending from the upper side to intersect with at least one of the two opposing lateral bores is disposed, ~~the first opening of which is situated at least partially on the underside of the basic body and the second opening of which is situated on at least one of the upper side and laterally on the basic body.~~

22. (Currently Amended) Agitation system comprising a basic body having an upper side and an underside and according to claim 21, characterised in that, in the basic body, at least one first boring is disposed as at least one first through-channel with a, the passage axis ~~at~~ of which boring includes an angle α of with $0^\circ \leq \alpha < 90^\circ$ with a rotational axis of the agitation system, said angle opening to the upper side of the agitation system.

23. (Currently Amended)Agitation system according to claim ~~22~~21, wherein the basic body further comprises~~characterised in that, in the basic body, at least one lateral channel extending from a side wall of the basic body to a distance less than a radius of the basic body, and wherein the at least one first~~~~further second through-channel extends from~~~~is disposed, the first opening of which is situated at least partially on the underside~~~~upper side of the basic body and exiting in the at least one lateral channel~~~~and the second opening of which is situated on at least one of the underside and laterally on the basic body.~~

24. (Currently Amended)Agitation system according to claim 23, ~~wherein~~~~characterised in that, in the basic body further comprises, at least one second boring is disposed as at least one second through-channel having a, the passage axis of which boring includes~~~~at an angle α of with $0^\circ \leq \alpha < 90^\circ$ with the rotational axis of the agitation system, said angle opening to~~~~toward~~ the underside of the agitation system.

25. (Currently Amended)Agitation system according to claim ~~24~~23, ~~wherein~~~~characterised in that~~~~that the at least one of the first and the second through-channel extends from the upper side and intersects with the at least one lateral channel~~~~and the first and the second through-channel meet each other and, forming a common through-channel, emerge~~~~emerging~~ laterally from the agitation system.

26. (Currently Amended)Agitation system according to claim ~~21~~23, ~~wherein~~~~characterised in that~~ two or more of the at least one of the first and second through-channels are disposed along ~~at~~ the circumference of the basic body of the agitation system at a uniform spacing relative to each other.

27. (Currently Amended)Agitation system according to claim 22, ~~wherein~~~~characterised in that~~ the basic body, in ~~at~~ the cross-section perpendicular to the rotational axis, is circular cylindrical, elliptical, polygonal, square or rectangular.

28. (Currently Amended)Agitation system according to claim 21, ~~wherein~~~~characterised in that~~ the basic body is oval, egg-shaped or cuboid.

29. (Currently Amended)Agitation system according to claim 21,
~~wherein~~~~characterised in that~~ the basic body has recesses along its circumferential edge in
~~at~~ the rotational direction.

30. (Canceled)

31. (Withdrawn) Arrangement for parallel, automated cultivation of cells in
liquid columns on a millilitre scale, characterised by at least one device or agitation system
according claim 1.

32. (Withdrawn) Arrangement according to claim 31, characterised by a
block, in which a number of cavities, which corresponds to the number of containers, are
disposed, which represent containers themselves or are configured for receiving containers.

33. (Withdrawn) Arrangement according to claim 32, characterised in that the
cavities are configured as borings with a diameter corresponding to the external diameter of
the containers.

34. (Withdrawn) Arrangement according to claim 32, characterised in that at
least one of means for moderating the temperature of the block, means for driving the
magnetic agitation system and a sterile gas supply to the containers are disposed in the block.

35. (Currently Amended)Arrangement comprising a block having a plurality
of containers configured to form fit a vessel having the agitation system according to claim
2130, wherein ~~characterised in that~~ at least one of the plurality of containers, ~~the arrangement~~
and the block are sealed in a sterile manner ~~on their or its upper side~~ by means of a cover.

36. (Currently Amended)Arrangement according to claim 35,
~~wherein~~~~characterised in that~~ the cover has an opening for ~~at~~ the release of gases and has
access to ~~an~~ the interior of ~~each~~ the container or block, which opening extends in a straight
line and longitudinally from the interior to ~~an~~ the outer side of the cover and connects these
together in an open manner for gas convection.

37. (Currently Amended)Arrangement according to claim 36,
~~wherein~~characterised in that, in the interior, a higher gas pressure is present than on the outer
side of the cover.

38. (Currently Amended)Arrangement according to claim 36,
~~wherein~~characterised in that the opening is configured as~~has the form of~~ a boring or of a
tube.

39. (Currently Amended)Arrangement according to claim 36,
~~wherein~~characterised in that the opening has a clearance width, which makes possible the
introduction of a sampling element or of a sensor, a pipette tip, a piercing cannula, a pH
electrode or another object or elongated object into the interior of the container or block.

40. (Currently Amended)Arrangement according to claim 36,
~~wherein~~characterised in that the opening is a tube made of metal or metal alloys,
advantageously made of at least one of aluminum and silver.

41. (Currently Amended)Arrangement according to claim 36, further
comprising~~characterised by~~ container separating elements configured to~~which, when in the~~
~~state set upon the containers or the block~~, separate individual containers from each other in at
least one of a gas- and liquid-impermeable manner.

42. (Currently Amended)Arrangement according to claim 36,
~~wherein~~characterised in that the cover has a sterile gas supply to the one or a plurality of
containers, for all the containers together or for a plurality or each of the containers
separately.

43. (Currently Amended)Arrangement according to claim 42,
~~wherein~~characterised in that the sterile gas supply has gas distributor structures which are
integrated in the cover or disposed adjacent to the cover.

44. (Currently Amended)Arrangement according to claim 43,
wherein~~characterised in that~~ channels are disposed in the cover as gas distributor structures.

45. (Currently Amended)Arrangement according to claim 44,
wherein~~characterised in that~~ the channels between at~~the~~ gas inlet into the gas distributor
structure and ~~the~~ gas outlets into the respective containers all have at least one of an equal~~the~~
same length and an equal~~the same~~ number of bends.

46. (Currently Amended)Arrangement according to claim 42,
wherein~~characterised in that~~ the gas supply is connected to a gas feed, if necessary via at
least one of sterile filters and air humidifiers.

47. (Withdrawn) Arrangement according to claim 31, characterised in that the
cover has at least one planar layer or flat plate, which covers the opening of the at least one
container.

48. (Withdrawn) Arrangement according to the claim 47, characterised in that
it has at least two planar layers which are disposed parallel to each other and between which
the gas distributor structures are disposed.

49. – 54. (Canceled)